REMARKS

Applicant added new claim 87, depending from independent claim 1, reciting the features that the shape of the molding material of the component further defines side surfaces that are substantially perpendicular to the mounting surface, and wherein the leadframe connections protrude out of the side surfaces. Support for this feature is provided, for example in FIG. 3 of the application and in its corresponding description in the written specification.

The examiner rejected claims 1, 2, 7, 14 and 15 under 35 U.S.C. §102(e) as being separately anticipated by Stalions (U.S. Application No. 2002/0097579) and by Roberts (U.S. Application No. 2004/0084681).

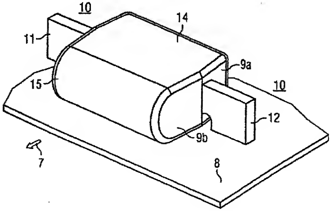
Applicant's independent claim 1 recites "A surface-mountable radiation-emitting component, comprising:

a leadframe and a radiation-emitting chip mounted on said leadframe;

a molding material encasing said leadframe and said radiation-emitting chip, the molding material having a shape defining a mounting surface of the component, said mounting surface extending at a first predetermined angle, said first predetermined angle having a value lying within a range from 0° to 20° relative to a main emission direction of the component, said molding material having a shape defining a curved surface in the main emission direction".

FIG. 3 shows an illustration of an exemplary embodiment of applicant's component.

FIG 3



As shown, applicant's component includes a molding material that encases a leadframe and a radiation-emitting chip mounted on the leadframe. The molding material has a shape defining a mounting surface (i.e., the surface that is subsequently mounted on a target surface; in the above drawing the mounting surface is the surface that contacts target surface 8). That mounting surface extends at an angle of 0-20° with respect to the main emission direction. In the above drawing, the direction of emission is indicated by the arrow 7. In other words, the mounting surface of applicant's component is approximately parallel to the emission direction of the component, or slightly skewed (up to 20 degrees) with respect to the main emission direction. This design facilitates sideway illumination of the target surface on which applicant's component is mounted.

Applicant contends that none of the references cited by the examiner discloses applicant's component design as recited in independent claim 1, including the feature of "the molding material having a shape defining a mounting surface of the component, said mounting surface extending at a first predetermined angle, said first predetermined angle having a value lying within a range from 0° to 20° relative to a main emission direction of the component."

Stalions describes a LED having a configuration that includes a highly thermally conductive surface mount package that enables the use of higher drives currents to produce increase brightness (paragraph 1, page 1). More specifically, the embodiment of the LED shown in FIGS. 1 and 2 includes a chip 10, a focusing dome 12, a lead frame 14 contact pads 15 and packaging 16 (paragraph 21, page 2). Stalions explains that:

> **Lead frame 14 shown in FIGS. 1 and 2 comprises four contact pads 15. In other embodiments, LED 10 and lead frame 14 could be designed to have any number of contact pads 15 depending on the environment in which LED 10 is to be used. <u>Contact pads 15 serve the dual purpose of establishing electrical contact between the circuit board and LED 10</u> and providing a heat conduction path to dissipate heat from LED 10. (emphasis added, paragraph 33, page 3)**

Thus, the contact pads 15 define the mounting surface of Stalions' LED device. Indeed, Stalions' FIG. 3, depicting the dimensions of the footprint of the LED 10, shows the outlines of the pads 15, indicating that the contact pads 15 come in contact with the surface that supports the LED 10 (see FIG. 3 and paragraph 35 on page 3). As shown in FIG. 2, the mounting surface defined by contact pads 15 appears to define an angle of approximately 90° with respect to the main emission direction of the LED.

It also follows that the packaging 16 (which the examiner equated to claim1's recited "molding material") does not have any surface that contacts the circuit board. Therefore, because the packaging 16 does not contact the circuit board, or any other object, the packaging 16 cannot be said to define a mounting surface.

Accordingly, Stalions does not disclose or suggest the features of "a molding material encasing said leadframe and said radiation-emitting chip, the molding material having a shape defining a mounting surface of the component, said mounting surface extending at a first predetermined angle, said first predetermined angle having a value lying within a range from 0° to 20° relative to a main emission direction of the component," as required by applicant's independent claim 1.

With respect to Roberts, the examiner stated:

> 1. Roberts (figures 1 to 11) specifically figures 3 and 4 show a surface-mounting radiation-emitting component 100, comprising: a leadframe 102,106 and a radiation-emitting chip 105 mounted on said leadframe; a molding material 104 encasing said leadframe and said radiation-emitting chip, the molding material having a shape defining a mounting surface of the component, said mounting surface extending at a first predetermined angle, said first predetermined angle having a value lying within a range from 0 degrees to 20 degrees relative to a main emission direction of the component (Note: by including the 0 degrees refer that range can be 0 degrees relative to a main emission direction of the component), said molding material having a shape defining a curved surface (110,top surface of 108) in the main emission direction; (Office Action, pages 3-4)

Applicant disagrees with the examiner's contentions and characterization of Roberts.

Roberts describes an opto-electronic emitter assemblies incorporating a plurality of optical radiation emitter devices (paragraph 4, page 1). Roberts further describes, in relation to FIGS. 2 and 3, that the device includes electronic leads 102 (which the examiner equated to a leadframe) extending from one side of the encapsulant 104 (which the examiner equated to the claim 1's recited "molding"). Additionally, as shown in FIG. 10, the LEDs' electronic leads 102 are mounted to a printed circuit board 214. Roberts explains that:

> **Each of the LEDs 100 includes several leads 102 having standoffs that ensure consistent insertion depth of the LEDs in the holes provided in circuit board 214. This, in turn, ensures that apertures 217 of each of LEDs 100 are located the same distance from circuit board 214 thereby aiding in the registration process. (Roberts, page 6, paragraph 90).**

Thus, because the LEDs 100 are located at some uniform distance away from the circuit board, it follows that the surfaces of the encapsulant 104 of the LEDs from which the leads 102 extend do not contact the circuit board 214.

Additionally, Roberts explains:

> **[0091] As shown in the drawings, lamp assembly 210 further includes a mounting plate 230 that is secured to the top of the lamp assembly and to the backs of LEDs 100. Preferably, mounting plate 230 is made of a material having a high thermal conductivity so as to not only function as a mounting plate, but also function as a heat sink for LEDs 100. As best shown in FIG. 7, mounting plate 230 includes a lamp mounting portion 232 and a mirror mounting portion 234, which are angled with respect to one another to ensure proper mounting within a mirror housing 250. Lamp mounting portion 232 preferably includes a first set of apertures 236 corresponding in size and position to apertures 217 in LED 100 and the first set of heat stake pegs 224 of reflector 220. Lamp mounting portion 232 further includes a second set of apertures 238 that correspond in position to the second set of heat stake pegs 226. Thus, mounting plate 230 may be slid onto heat stake pegs 224 and 226 and, subsequently, the heat stake pegs may be thermally deformed causing them to expand on their distal end and thereby secure mounting plate 230 to reflector 220 with LED subassembly 212 sandwiched in between.**
>
> **[0092] As apparent from the drawing figures, mounting plate 230 is physically in contact with the backs of LEDs 100 and is in thermal contact with the heat extraction members 106 of LEDs 100 so as to provide a thermal path from the LEDs. Such heat sinking allows the LEDs to be driven at greater current levels to thereby emit more light. To increase thermal transfer between the heat extraction members of the LEDs and the mounting plate, a silicon RTV heat sink compound may be provided therebetween. (Roberts, page 6, paragraphs 91-92).**

Thus, Roberts' LED device has a heat extraction member 106 whose back surface is mounted to mounting plate 230. But nowhere does Roberts describe that the encapsulant 104 is itself mounted to any object or surface, and therefore the encapsulant 104 cannot be said to define a mounting surface of the LED 100. Indeed, because the encapsulant of Roberts' LED has a critical upper temperature limit that is close to the temperatures of the environments in which the LEDs 100 are used in (see, for example, paragraph 93), the encapsulant 104 cannot provide sufficient heat sinking functionality for the LEDs 100, and therefore there would be no reason to connect any part of the encapsulant 104 to any other surface.

Accordingly, Roberts also fails to disclose or suggest at least the features of "a molding material encasing said leadframe and said radiation-emitting chip, the molding material having a

shape defining a mounting surface of the component, said mounting surface extending at a first predetermined angle, said first predetermined angle having a value lying within a range from 0° to 20° relative to a main emission direction of the component," as required by applicant's independent claim 1.

Because none of the references cited by the examiner discloses or suggests, alone or in combination, at least the feature of "a molding material encasing said leadframe and said radiation-emitting chip, the molding material having a shape defining a mounting surface of the component, said mounting surface extending at a first predetermined angle, said first predetermined angle having a value lying within a range from 0° to 20° relative to a main emission direction of the component," applicant's independent claim 1 and the claims depending from it are patentable over the cited art.

It is believed that all the rejections and/or objections raised by the examiner have been addressed.

In view of the foregoing, applicant respectfully submits that the application is in condition for allowance and such action is respectfully requested at the examiner's earliest convenience.

All of the dependent claims are patentable for at least the reasons for which the claims on which they depend are patentable.

Canceled claims, if any, have been canceled without prejudice or disclaimer.

Any circumstance in which the applicant has (a) addressed certain comments of the examiner does not mean that the applicant concedes other comments of the examiner, (b) made arguments for the patentability of some claims does not mean that there are not other good reasons for patentability of those claims and other claims, or (c) amended or canceled a claim does not mean that the applicant concedes any of the examiner's positions with respect to that claim or other claims.

Enclosed is a Petition for One Month Extension of Time.

The fees in the amount of $120 are being paid concurrently on the Electronic Filing System (EFS) by way of Deposit Account authorization.

Please apply any other required fees to deposit account 06-1050, referencing the attorney docket number shown above.

Respectfully submitted,

Date: Oct 26, 2007

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